## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Louis B. ROSENBERG et al.

Serial No.:

Unassigned

Examiner:

**TBD** 

Confirmation No.: Unassigned

Art Unit:

**TBD** 

Filed:

February 19, 2004

For:

COMPUTER INTERFACE APPARATUS INCLUDING LINKAGE HAVING FLEX

(As Amended)

U.S. Patent and Trademark Office 2011 South Clark Place Customer Window, Mail Stop Patent Application Crystal Plaza Two, Lobby, Room 1B03 Arlington, VA 22202

## INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(b)

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

[]	Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Fo	rm
	PTO/SB/08 is enclosed.	

- [x] No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. 09/748,051 to which the above-identified application claims priority under 35 U.S.C. §120.
- No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- Publication(s) \_\_\_ listed on the attached Form PTO/SB/08A were cited in a []foreign search or examination report corresponding to application serial no. and mailed on .
- Enclosed is a copy of a non-English publication(s) \_\_\_. Pursuant to §609 of the П M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

()			<u> </u>		ication(s) English language iority from this non-English publication.
[]	[] Enclosed is an explanation of non-English publication(s) for what translation is not available.				h publication(s) for which an English
[]		Enclosed is an English translation of non-English publication(s)cited attached Form PTO/SB/08A.			
	E	nclose	ed is a copy of pending	patent App	olication Serial No
T] periods:	his Info	rmati	on Disclosure Statemen	t is filed w	ithin any one of the following time
	[x	:]	within three months fro than a CPA under 37 C		g date of this national application other 3(d);
	[]		within three months from in 37 C.F.R. §1.491 in		of entry of the national stage as set forth ational application;
	[]		before the mailing date	of a first o	office action on the merits; or
	[]		before the mailing of a continued examination		action after the filing of a request for C.F.R. § 1.114.
It	is respe	ectfull	ly requested that the Exa	aminer con	sider the above-noted information and
return an	initiale	d cop	y of the attached Form l	PTO/SB/08	3A to the undersigned.
Dated: <u>F</u> e	bruary	19, 20	004		Respectfully submitted, COOLEY GODWARD LLP
Cooley G ATTN: P One Free Reston To 11951 Fro Reston, V	atent G dom Sq own Ce eedom l A 201	roup uare nter Drive 90-56		By:	Erik B. Milch
Tel: (703) Fax: (703	•				Reg. No. 42,287

196272 v1/RE 47G001!.DOC

+

Sub	stitute for form 14	49A/PT(	)		Complete if Known
l man	INFORMATION DISCLOSURE			Application Number	
1				Filing Date	February 19, 2004
SI	<b>PATEMENT</b>	BY A	PPLICANT	First Named Inventor	Louis B. ROSENBERG
	(use as many s	heets as	nocessary)	Group Art Unit	
(use us many sheets as necessary)			· necessary)	Examiner Name	
Sheet	1	of	8	Attorney Docket Number	IMMR-050/04US

	U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite	U.S. Patent Do	Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY		
Initials	110.	5,785,630	1	Bobick, et al.	07/28/1998		
	<del>                                     </del>	5,766,016	<del> </del>	Sinclair et al.	06/16/1998		
		5,547,382		Yamasaki et al.	08/20/1996		
		5,466,213		Hogan et al.	11/14/1995		
		5,334,027	+	Wherlock	08/02/1994		
		5,309,140		Everett, Jr., et al.	05/03/1994		
<del></del>	+	5,299,810		Pierce et al.	04/05/1994		
		5,275,174		Cook	01/04/1994		
	<del>                                     </del>	5,271,290	<u> </u>	Fischer	12/21/1993		
·		5,240,417		Smithson et al.	08/31/1993		
		5,212,473		Louis	05/18/1993		
		5,078,152		Bond et al.	01/07/1992		
		5,038,089	+	Szakaly	08/06/1991		
		5,035,242		Franklin et al.	07/30/1991		
		5,022,407		Horch et al.	06/11/1991		
	1	5,019,761		Kraft	05/28/1991		
		4,934,694		McIntosh	06/19/1990		
		4,930,770		Baker	06/05/1990		
		4,891,764		McIntosh	01/02/1990		
		4,794,392		Selinko	12/27/1988		
		4,713,007	<del></del>	Alban	12/15/1987		
		4,708,656		de Vries et al.	11/24/1987		
		4,599,070		Hladky et al.	07/08/1986		
		4,581,491	<del></del>	Boothroyd	04/08/1986		
		4,513,235		Acklam et al.	04/23/1985		
		4,236,325		Hall et al.	12/02/1980		
		4,160,508		Salisbury, Jr.	07/10/1979		
		3,911,416		Feder	10/07/1975		
	1	3,903,614		Diamond et al.	09/09/1975		
	1 1	3,902,687		Hightower	09/02/1975		
		3,623,064		Kagan	11/23/1971		
		3,517,446	<u> </u>	Corlyon et al.	06/30/1970		
	<del>                                     </del>	3,497,668		Hirsch	02/24/1970		

Examiner	Date		
Signature	Considered	· ·	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Unique citation designation number.
 See attached Kinds of U.S. Patent Documents.

_
+

Sub	stitute for form 14	49A/PT(	)	Complete if Known		
TNI	INFORMATION DISCLOSURE			Application Number		<del></del>
				Filing Date	February 19, 2004	_
ST	<b>TATEMENT</b>	BY A	PPLICANT	First Named Inventor	Louis B. ROSENBERG	
	(use as many s	haats as	necessarul	Group Art Unit		
	(use us many si	neers as	necessary	Examiner Name		-
Sheet	2	of	8	Attorney Docket Number	IMMR-050/04US	
Sheet	2	of	8	Attorney Docket Number	IMMR-050/04US	

3,220,121	Cutler	11/30/1965
3,157,853	Hirsch	11/17/1964
4,994,669	Stern	02/1991
6,201,533	Rosenberg	03/2000
6,004,134	Marcus et al.	12/1999
5,831,596	Marshall et al.	11/1998
5,806,140	Rosenberg et al.	09/1998
5,790,108	Salcudean et al.	08/1998
5,731,804	Rosenberg	03/1998
5,228,356	Chang	07/1993
5,182,557	Lang	01/1993
4,794,388	Matthews	12/1988
4,758,692	Roeser et al.	07/1988
3,832,895	Strandh	09/1974
3,490,059	Paulsen et al.	01/13/1970
3,795,150	Eckhardt	03/05/1974
3,919,691	Noli	11/11/1975
4,148,014	Burson	04/03/1979
4,216,467	Colston	08/05/1980
4,398,889	Lam et al.	08/16/1983
4,414,984	Zarudiansky	11/15/1983
4,436,188	Jones	03/13/1984
4,448,083	Hayashi	05/15/1984
4,477,043	Repperger	10/16/1984
4,489,304	Hayes	12/18/1984
4,538,035	Pool	08/27/1985
4,550,617	Fraignier et al.	11/05/1985
4,603,284	Perzley	07/29/1986
4,604,016	Joyce	08/05/1986
4,632,341	Repperger et al.	12/30/1986
4,689,449	Rosen	08/25/1987
4,704,909	Grahn et al.	11/10/1987
4,712,101	Culver	12/08/1987
4,712,971	Fyler	12/15/1987
4,775,289	Kazerooni	10/04/1988
4,800,721	Cemenska et al.	01/31/1989
4,803,413	Kendig et al.	02/07/1989
4,811,608	Hilton	03/14/1989
4,861,269	Meenen, Jr.	08/29/1989
4,874,998	Hollis Jr.	10/17/1989
4,878,374	Nelson	11/07/1989

Examiner	Date	
Signature	Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Sut	Substitute for form 1449A/PTO				Complete if Known	
	INFORMATION DISCLOSURE			Application Number		
				Filing Date	February 19, 2004	
S	<b>FATEMENT</b>	BYA	PPLICANT	First Named Inventor	Louis B. ROSENBERG	
	(use as many s	heets as	necessary)	Group Art Unit		
	(use us many sneets us necessary)			Examiner Name		
Sheet	3	of	8	Attorney Docket Number	IMMR-050/04US	

	4,879,556	Duimel	11/07/1989
	4,896,554	Culver	01/30/1990
	4,949,119	Moncrief et al.	08/14/1990
	4,962,448	DeMaio et al.	10/09/1990
	5,007,300	Siva	04/16/1991
	5,044,956	Behensky et al.	09/03/1991
	5,103,404	McIntosh	04/07/1992
	5,107,080	Rosen	04/21/1992
	5,107,719	Kota	04/28/1992
	5,116,051	Moncrief et al.	05/26/1992
[	5,142,931	Menahem	09/01/1992
	5,143,505	Burdea et al.	09/01/1992
	5,146,566	Hollis, Jr. et al.	09/08/1992
	5,182,557	Lang	01/26/1993
	5,184,319	Kramer	02/02/1993
	5,185,561	Good et al.	02/09/1993
	5,186,629	Rohen	02/16/1993
	5,193,963	McAffee et al.	03/16/1993
	5,223,776	Radke et al.	06/29/1993
	5,228,356	Chuang	07/20/1993
	5,264,768	Gregory et. al.	11/23/1993
	5,275,565	Moncrief	01/04/1994
	5,277,281	Carlson et al.	01/11/1994
	5,296,846	Ledley	03/22/1994
	5,296,871	Paley	03/22/1994
	5,351,412	Furuhata et al.	10/04/1994
	5,354,162	Burdea et al.	10/11/1994
	5,355,148	Anderson	10/11/1994
	5,379,663	Hara	01/10/1995
	5,396,266	Brimhall	03/07/1995
	5,396,267	Bouton	03/07/1995
	5,405,152	Katanics et al.	04/11/1995
	5,414,337	Schuler	05/09/1995
	5,429,140	Burdea et al.	07/04/1995
	5,436,640	Reeves	07/25/1995
	5,452,615	Hilton	09/26/1995
	5,513,100	Parker et al.	04/30/1996
	5,565,840	Thorner et al.	10/15/1996
	5,576,727	Rosenberg et al.	11/19/1996
	5,577,981	Jarvik	11/26/1996
	5,587,937	Massie et al.	12/24/1996
	5,589,828	Armstrong	12/31/1996

Examiner	Date	
Signature	Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

+

Sub	estitute for form 14	49A/PT0	)	Complete if Known						
1 TAT		AT TA	ect ocume	Application Number				Application Number		
			SCLOSURE	Filing Date February 19, 2004						
Si	<b>FATEMENT</b>	BY A	PPLICANT	First Named Inventor Louis B. ROSENBERG						
	(use as many s	heets as	necessaru)	Group Art Unit	_					
	(use us many s	neers as		Examiner Name						
Sheet	4	of	8	Attorney Docket Number IMMR-050/04US						

	5,589,854	Tsai	12/31/1996	
	5,591,924	Hilton	01/07/1997	
	5,629,594	Jacobus et al.	05/13/1997	
	5,642,469	Hannaford et al. 06/24/1997		
	5,643,087	Marcus et al. 07/01/1997		
	5,666,138	Culver	09/09/1997	
	5,666,473	Wallace	09/09/1997	
	5,694,153	Aoyagi et al.	12/02/1997	
	5,709,219	Chen et ai.	01/20/1998	
	5,721,566	Rosenberg et al.	02/24/1998	
	5,724,068	Sanchez et al.	03/03/1998	
	5,731,804	Rosenberg	03/24/1998	
	5,734,373	Rosenberg et al.	03/31/1998	
	5,742,278	Chen et al.	04/21/1998	
	5,754,023	Roston et al.	05/19/1998	
	5,755,577	Gillio	05/26/1998	
I	5,767,839	Rosenberg	06/16/1998	
	5,784,052	Keyson	07/21/1998	
	5,790,108	Salcudean et al.	08/04/1998	
	5,805,140	Rosenberg et al.	09/08/1998	
	5,816,105	Adelstein	10/06/1998	
	5,821,920	Rosenberg et al.	10/13/1998	
	5,821,921	Osborn et al.	10/13/1998	
	5,828,363	Yaniger et al.	10/27/1998	
	5,847,528	Hui et al.	12/08/1998	
	5,889,670	Schuler et al.	03/30/1999	
	5,914,705	Johnson et al.	06/22/1999	
	5,979,892	Smith	11/09/1999	
	5,984,785	Takeda et al.	11/16/1999	
	6,004,134	Marcus et al. 12/21/1999		
	6,028,593	Rosenberg et al.	02/22/2000	
	6,067,077	Martin et al.	05/23/2000	
	6,104,382	Martin et al.	08/15/2000	
	6,275,213	Tremblay et al.	08/14/2001	

Examiner	Date
Signature	Considered

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PTO	/CP	ZΩ	A ((	18.	ስለነ
PIU	/30	/U0/	Aι	JO-1	JUJ

Sut	ostitute for form 14	149A/PT(	)	Complete if Known				
TN.	TEADM ATI	ANI IAT	CI OCIDE	Application Number				
	- <del>-</del>		SCLOSURE	Filing Date February 19, 2004				
S	TATEMENT	BYA	PPLICANT	First Named Inventor Louis B. ROSENBERG				
	(use as many s	hoots as	nocossaru)	Group Art Unit				
	(use us many s	neers as	necessary	Examiner Name				
Sheet	5	of	8	Attorney Docket Number	IMMR-050/04US			

				FOREIGN	PATENT DOCUMENTS		•
Examiner Initials*	Cite No.1	Totelan Patent Document			N. CD	Date of Publication	
mittais.	INO.	Office <sup>1</sup>	Number <sup>2</sup>	Kind Code <sup>3</sup> (if known)	Name of Patentee or Applicant of Cited Document	of Cited Document MM-DD-YYYY	T <sup>4</sup>
		EP	0 349 086	A1	Stork Kwant B.V.	01/03/1990	
		JP	H4-8381		Taito Corporation	01/13/1992	
		JP	H2-185278		Taito Corporation	07/19/1990	
		JP	H7-24147		Sega Corporation	01/27/1995	
		JP	H5-192449		Taito Corporation	08/03/1993	
		JP	4-34610			02/05/1992	
		UK	2254911A			10/21/1992	
		PCT	WO9502233			01/19/1995	
		PCT	WO9520787			08/03/1995	
		PCT	WO9520788			08/03/1995	
		PCT	WO9532459			11/30/1995	

Examiner	Cite	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book,	T <sup>2</sup>
Initials*	No.1	magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	-
		Baigrie, "Electric Control Loading - A Low Cost, High Performance Alternative," Proceedings of Interservice/Industry Training Systems Conference, pp. 247-254, November 6-8, 1990	
		Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993	
		Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives pp. 1-131, May 1990, archived 8/14/90	
		Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," JPL Publication 85-11, NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985	
,		Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990	
		Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993	
		Snow et al., 'Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989	
		Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990	
		Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," MIT Archive, pp. 1-88, February 1990, archived 8/13/90	
		Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993	
		Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, Advances in Robotics, pp. 1-12, 1992	

Examiner	Date	
Signature	 Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

 <sup>&</sup>lt;sup>1</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
 <sup>2</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
 <sup>3</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.
 <sup>4</sup> Applicant is to place a check mark here if English language Translation is attached.

Please type a	plus	sign	(+)	inside	this	box	=

+
---

PTO/SB/08A (08-00)

Sub	stitute for form 14	149A/PTC	)		Complete if Known
l m	INFORMATION DISCLOSURE			Application Number	
INFORMATION DISCLOSURE				Filing Date	February 19, 2004
Si	TATEMENT	BYA	PPLICANT	First Named Inventor	Louis B. ROSENBERG
	luse as many s	choote ne	necessarul	Group Art Unit	
	(use as many sheets as necessary)			Examiner Name	
Sheet	6	of	8	Attorney Docket Number	IMMR-050/04US

	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337	
	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel	
	Processors," DSC-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992	
	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992	
	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993	
	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics in Space, Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990	
	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90	
	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980	
	Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981	
	McAffee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," JPL 1988, JPL D-5172	
	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995, archived 7/6/95	
_	Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," Intervention/ROV '91 Conference & Exposition, Hollywood, Florida, May 21-23, 1991	
	Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration, Rensselaer Polytechnic Institute, Sep. 30- Oct. 1, 1992	
	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990	
	Terry et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fourteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988	
	Howe, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation,"  Proceedings of the 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 1992	
	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	
	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," Journal of The Acoustical Society of America, Vol. 82, No. 4, October 1987	
	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980	
	Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989	
	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
	Marcus, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994	
	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	
	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.	

Examiner	Date
Signature	Considered

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

Please tvr	e a nlus	s sion (+	) inside	this ho	<u>د</u> ،
ricase typ	oc a pius	Signit	i ilisiuc	uus oo	

+

PTO/SB/08A (08-00)

Sub	stitute for form 14	49A/PT0	)	Complete if Known		
IN	FORMATIO	)N DI	SCLOSURE	Application Number	F-h10 2004	
				Filing Date	February 19, 2004	
51	AIEMENI	BYA	PPLICANT	First Named Inventor	Louis B. ROSENBERG	
	(use as many s	heets as	necessary)	Group Art Unit		
(use as many sheets as necessary)				Examiner Name		
Sheet	7	of	8	Attorney Docket Number	IMMR-050/04US	

	"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight
<del></del>	Instrument Corporation, Revised 28 January 2002 (3 pages).
	"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
	Snow, E., et al., "Compact Force Reflecting Hand Controller," NASA Tech Brief Vol. 15, No. 4, Item 153, April 1991, pp. i, 1-3, 1a-15a.
	Howe, R. et al., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, Vol. 1833, Nov. 1992.
	Buttolo, et al., "Hard Disk Actuators for Mini Teleoperation," Proc. SPIE, Telemanipulator and Telepresence Technologies Symp., Oct. 1994, pp. 1-8.
	Kilpatrick, P., "The Use of a Kinesthetic Supplement in an Interactive Graphics System," Univ. of N. Carolina, 1976, pp. 1-175.
	Buttolo et al., "Pen Based Force Display for Precision Manipulation in Virtual Environments", IEEE March 1995, pp. 217-224.
	Ellis, R.E. et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface" ASME December 3, 1993, DSC-Vol. 49, pp. 55-64.
	Adelstein Bernard D. et al., "A High Performance Two Degree-of-Freedom Kinesthetic Interface," Massachusetts Institute of Technology 1992, pp. 108-112.
	Colgate, J. et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces," Sept. 22, 1993.
	Burdea, G., et al., "Distributed Virtual Force Feedback", IEEE Workshop on Force Display in Virtual Environments and its Application t Robotic Teleoperation," May 1993, pp. 25-44.
	Rosenberg, Louis B., "The Use of Virtual Fixtures to Enhance Operator Performance in Time Delayed Teleoperation, Armstrong Laboratory, March 1993, pp. 1-45.
	Rosenberg, Louis B., "Perceptual Design of a Virtual Rigid Surface Contact," Center for Design Research Stanford University, Air Force Material Command, April 1993, pp. 1-41.
	Burdea, Grigore et al., "Dextrous Telerobotics with Force Feedback-An Overview," Robotica 1991, Vol. 9.
	Adelstein, Bernard D, et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control Research," Dept. of Mech. Eng., MIT, 1992, pp. 1-24.
	Hannaford, B., et al., "Performance Evaluation of a Six-Axis Generalized Force-Reflecting Teleoperator," IEEE Transactions on Systems, Man, and Cybernetics, 1991.
	Minsky, et al., "Felling and Seeing: Issues in Force Display", Department of Computer Science, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, 1990 ACM.
	Batter, et al., "Grope-1: A Computer Display to the Sense of Feel", University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA
	Gotow, J.K., et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE 1987, pp. 688-689.
	Atkinston, William D. et al., "Computing with Feeling," Comput. & Graphics, Vol. 2, 1977, pp. 97-103.
	Tavkhelidze, et al., "Kinematic Analysis of Five-Link Spherical Mechanisms," Mechanism and Machine Theory, Vol., 9, 1974, pp. 181-190.
	Schmult, Brian et al., "Application Areas for a Force-Feedback Joystick," ASME 1993, DSC-Vol. 49, pp. 47-54.

Examiner	Date	
Signature	Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

PTO/SB/08A (08-00)

Sub	ostitute for form 14	49A/PT	)		Complete if Known
I IN			COLOCIDE	Application Number	
INFORMATION DISCLOSURE				Filing Date	February 19, 2004
SI	TATEMENT	BYA	PPLICANT	First Named Inventor	Louis B. ROSENBERG
	(use as many s	heets as	necessary)	Group Art Unit	
	(use us many sheets us necessary)			Examiner Name	_
Sheet	8	of	8	Attorney Docket Number	IMMR-050/04US

Russo, "The Design and Implementation of a Three Degree-of-Frredom Force Submitted Output Joystick", Submitted to the Department of Mechanical Engineering on May 11, 1990.
Kelley, A.J. et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface using an Electromagnetically Actuated Input/Output Device," Dept. of Elec. Engineering, Univ. of British Columbia, 1993, pp. 1-27.
Brooks, F. et al., "Project GROPE- Haptic Displays for Scientific Visualization," Computer Graphics, Vol. 24, No. 4, 1990, pp. 177-185.
Millman, P. et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," IEEE CH2969-4, 1991, pp. 1488-1492.
Ramstein, et al., "The Pantograph: A Large Workspace Haptic Device for a Multimodal Human-Computer Interaction," Computer-Human Interaction, CHI 1994.
Ramstein, C., "Combining Haptic and Braille Technologies: Design Issues and Pilot Study," ASSETS '96, 2 <sup>nd</sup> Annual ACM Conf. on Assistive Technologies, 1996, pp. 37-44.
Payette, J. et al., "Evaluation of a Force Feedback (Haptic) Computer Pointing Device in Zero Gravity", Proceedings of the ASME Dynamics Systems and Control Division, ASME 10/17/1996, pp. 547-553.
Iwata, H., "Artificial Reality with Force-feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, Vol. 24, No. 4, 1990, pp. 165-170.
Hirota, Koichi et al., "Development of Surface Display," IEEE 0-7803-1363-1, 1993, pp. 256-262.
Bostrom, M. et al., "Design of An Interactive Lumbar Puncture Simulator with Tactile Feedback," IEEE 0-7803-1363-1, 1993, pp. 280-286.

Examiner	Date	
Signature	Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

195918 v1/RE 476601!.DOC

Unique citation designation number.
 Applicant is to place a check mark here if English language Translation attached.